WHAT IS CLAIMED IS:

1. A seal mechanism including an annular retaining member, and a flexible member molded in one piece with the retaining member and having a sealing function, wherein said seal mechanism comprises a stress reduction mechanism for reducing the stress generated in said flexible member near the inside corner of said retaining member.

2. The seal mechanism according to claim 1, wherein said stress reduction mechanism is constructed such that the gap between the innermost diameter of said retaining member and the outside diameter of a shaft mounted in said flexible member and sliding freely along the flexible member is set to 0.9 mm or less.

3. The seal mechanism according to claim 1, wherein said stress reduction mechanism is constructed such that an inside corner of said retaining member has a curved surface with a radius of curvature equal to or larger than 0.1.

4. The seal mechanism according to claim 1, wherein said stress reduction mechanism is constructed such that a material with a swelling rate of 30% or less with respect to the sealed fluid is used for said flexible member which is in contact with a corner of said retaining member.

5. The seal mechanism according to claim 1, wherein said stress reduction mechanism is constructed

such that said flexible member has been removed from the inside corner of said retaining member.

6. The seal mechanism according to claim 1, wherein said stress reduction mechanism is constructed such that said flexible member which contacts the sealed fluid is made resistant to penetration of the sealed fluid by surface modification or a coating.

7. The seal mechanism according to claim 1, wherein said stress reduction mechanism is constructed such that the surface which slides over said sealing surface is made of a low-friction material, or has undergone surface modification, or is covered with a coating.

8. The seal mechanism according to claim 2, wherein a plurality of seal mechanisms each having a retaining member and flexible member are used.

9. The seal mechanism according to claim 2, wherein the retaining member has a plurality of through-holes.

10. A fuel pump comprising a reciprocating plunger, and a cylinder which is slip-fitted with the plunger and in which a variable-volume pressurizing chamber is formed with the reciprocating motion of said plunger, wherein said fuel pump is provided with the seal mechanism according to any of claims 1 to 9 between the plunder and cylinder.